

39.4792.R1:ZSC

15th April, 2009

Jeff Madden & Associates
36 Mort Street
BALMAIN NSW 2041

Attention: Mr. J. Madden

Dear Sirs,

ACOUSTIC ASSESSMENT - PROPOSED ALTERATIONS
FORTUNE OF WAR HOTEL & RUSSELL HOTEL, THE ROCKS

The purpose of this report is to present the results, findings, and recommendations of an acoustic assessment in relation to the proposed alterations at the Fortune of War Hotel and Russell Hotel, George Street, The Rocks.

It is proposed that alterations and additions are to be carried out to the Fortune of War and the Russell Hotels at 137 – 143a George Street, The Rocks. The two hotels are located in one building that form a U-shape to George Street, and in the hollow of the U are two commercial shops.

The alterations and additions are primarily the provision of toilets, a gaming room, a new foyer to the Russell Hotel. There are alterations and additions to the accommodation areas on level 1 and level 2, together with general upgrading to accord with the Building Code of Australia.

We are instructed that the following submission of the development application, Sydney Harbour Foreshore Authority (“SHFA”) have requested an acoustic assessment of the proposal, including consideration of potential noise impact associated change of use and from patrons and ‘activities’.

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Clarification was sought from Mr. C. Sargent (of SHFA) as to requirements for the acoustic assessment. Other than advising that both hotels were to be included in the assessment generalised advice for matters to be included in the report include:

- Relevant noise sources/music, patrons and outdoor areas
- Particulars as to change of use
- Entertainment, current and predicted for both premises
- Ambient monitoring over 24 hour periods
- Identification of sensitive receivers
- LAB criteria
- Noise mitigation measures

A Statement of Environmental Effects (“the SEE”) was prepared on behalf of the applicant by Jeff Madden Associates that has identified the proposed alterations and additions to the hotel. If the SEE is read in conjunction with this acoustic report then the matter of identifying the alterations (and that the operating times of operation of the hotels shall not change) should resolve a number of matters raised by SHFA.

Examination of the plans for the proposed alterations and additions reveal that the refurbishment of the bar to the Russell Hotel is one of an internal alteration. The provision of a foyer entrance at the south western corner of the building together with the construction of new toilet facilities is not envisaged to generate any acoustic impact.

Similarly the reduction of current lounge areas (at the rear) to provide gaming areas in the hotel reduces the amount of open glass area at the rear of the hotel and also reduces the size of the current rear bar which has open windows to the rear lane (Nurses Walk).



The SEE considered noise would not be an issue in that there were no residents in proximity to the subject development and ambient noise levels during the night-time period were relatively high, in view of the current activities occurring in George Street, The Rocks.

An inspection of the hotel was carried out in late 2008 and a noise logger was installed on the George Street boundary of the property to ascertain the acoustic environment of the area.

Attended measurements were carried out in the early morning of Thursday 9th April 2009, when both hotels were closed, for the purpose of determining ambient noise levels in the area, which during our course of our site visit was found to be primarily as a result of mechanical plant servicing various commercial premises.

An attended site visit to ascertain the noise emission from the operation of the hotel was carried out on the evening of Friday 17th April 2009.

Measurement Techniques

Measurements were taken in accordance with the Australian Standard AS1055 “Acoustics - Description and Measurement of Environmental Noise” and the requirements of the noise measurement survey sheets contained in the “Environment Protection Authority - Environmental Noise Control Manual” and the ambient background measurement procedures set out in Appendix B of the EPA’s *Industrial Noise Policy*.

Sound level measurements were recorded using a Brüel & Kjær Modular Sound Level Meter Type 2260 with enhanced sound analysis software Type BZ7202. The reference calibration level of 94dB the meter was checked prior to and after measurements using a Brüel & Kjær Sound Level Calibrator Type 4231 and exhibited no system drift.



The unattended logger was an ARL noise logger set to continuously monitor the noise and analyse the noise in 15 minute time periods. The reference calibration of the logger was checked prior to and after the measurements using a Brüel & Kjær Sound Level Calibrator Type 4231 and exhibited no system drift.

Measurement Results

The Fortune of War Hotel and Russell Hotel is located on the north western corner of Glebe Street and George Street as shown in Appendix A.

Appendix A also includes an aerial view identifying the logger location (blue dot) and the attended measurement locations (yellow dots) used in this assessment. Globe Street, Nurses Walk and Surgeons Circuit are all pedestrian thoroughfares and do not carry motor vehicle traffic. Accordingly the acoustic environment on those pathways/roads is one of general traffic noise from George Street or the city, and mechanical plant servicing the various commercial premises in the area.

The logger results for the front awning are set out in Appendix B. The logger results show the minimum levels to occur in the early hours of the morning and reveal a Rating Background Level of 53 dB(A) for the post midnight night time period and 60 dB(A) for the pre-midnight night time period. The Leq noise levels (as a result of traffic) are significantly higher than the background levels throughout the day/evening and night time periods. In acoustic terms the environment would not be described as quite or similar to that in a residential area but is an acoustic environment typically experienced in the Rocks area (from other similar noise assessments).

With the provision of the SEE this year and finalisation of heritage requirements in relation to the subject plans a site visit was carried out in the early morning of 9th April 2009 to obtain ambient background measurements with a lower contribution from road traffic.

On the night of the first attended measurements the weather was fine and clear with a temperature of approximately 18°C and no wind at the subject site.



The ambient background noise level for the area was found to be dominated by traffic (local and distant) and mechanical plant. The background level for location 1 in George Street is consistent with the nighttime logger results of 53dB(A). On moving in a westerly direction into Harrington Street the background level reduced to 50dB(A) and was found to be primarily a result of mechanical plant on nearby commercial buildings.

At the rear of the subject hotel (location 4) an ambient background level of 62 dB(A) was obtained and was found to be dominated by a fan located on the building above Surgeons Circuit (not the subject hotel).

The SEE does not identify the provision or otherwise of entertainment with respect to the matters requested from SHFA, other than identifying the new lounge in the Russell Hotel is to be similar to a wine bar. The SEE indicates that the proposed alterations and additions will not alter the trading time of the hotels or the current operations. For identification of the current operations as requested by SHFA, a site visit was carried out on the evening of Friday 17th April 2009 to ascertain current operations with respect to noise emitted from the premises.

The weather conditions at the time of the survey were overcast mild (17°C) and subject to intermittent showers prior to, during and after the measurements.

In terms of audible noise emitted from the hotel we found the emission of music from entertainment provided in the north eastern corner of the Fortune of War Hotel was audible external to the premises as was noise from patrons in the rear lounge area via open windows to Nurses Walk.

Noise from the aforementioned fan on top of the building above Surgeons Circuit was clearly audible and controlled the ambient background of 64 dB(A) at location 4.

At location 2 on the corner of Nurses Walk and Globe Street the fan was audible and partly contributed to the background level of 60 dB(A) which was more influenced by traffic on George Street .



On moving to Harrington Street (location 3) the aforementioned fan was barely audible and was not considered to influence the ambient background level of 58 dB(A).

In relation to the emission of music from the Fortune of War Hotel the amplification equipment for a solo artist was located just inside the open window (in the north eastern corner) which was open throughout the survey. The provision of recorded music was not audible in the rear lane or Harrington Street whilst the provision of entertainment was audible at location 2 (not giving rise to any measurable increase in level) and was inaudible at location 3, 4 and 5.

In the rear lounge area of the hotel patrons conversing in that lounge area (8 patrons) was audible via the open windows and gave rise to an average maximum level of 68 dB(A) at location 5 being immediately outside those windows. There are no open deck areas for the licensed part of the hotels.

Location 6 being adjacent to the open window at the north eastern corner of the hotel was found to realise an average maximum level of 81dB(A) from the DJ music and 94 dB(A) from the solo artist with recorded accompaniment.

For reference purposes, location 7 (being on the eastern side of the George Street and approximately 25 metres from the closest point of the hotel) was found during breaks in traffic to generate an average maximum level of 71 dB(A) from the solo performer and not cause a dB(A) increase with the provision of recorded music but a slight increase in the low frequency octave bands.

The attended measurement results are set out in Appendix C.



Discussion

The general Environment Protection Authority (EPA)/Council noise criteria is background + 5 dB (A) and is typically applied to the assessment of mechanical plant noise, although in some instances Councils may impose this general criterion to music as well.

We note that in relation to noise emission from Licensed Premises the NSW Liquor Administration Board (“LAB”) imposed a more stringent set of noise criteria to that normally imposed by the EPA.

The Hotels’ Liquor Licence requires compliance with the LAB criteria, which are more stringent than the EPA criterion of background + 5 dB(A). The same noise criteria (as the LAB) have been adopted by the Office of Liquor, Gaming and Racing, being the new government department replacing the LAB.

The LAB noise criteria are listed on the Liquor Licence for the Hotels that have been issued by the LAB. The LAB noise conditions have been imposed as temporary conditions by the OLGR. For consistency with the current Licence we will refer to the LAB/OLGR noise criteria for the licensed premise as the “LAB criteria”.

For the purposes of conducting an LAB compliance assessment, measurements are in the form of an average maximum level compared to the background level in octave bands, rather than the Leq approach adopted by the EPA/DECC for industrial noise sources.

In LAB assessments there is a requirement to break up the analysis into frequency components called octave bands with centre frequencies from 31.5 Hz to 8 kHz. Musically speaking, low frequency is typical of the bass guitar and bass drum whilst high frequency is a shrill like a cymbal or a triangle. The octave bands measured encompass most of the audible spectrum and the LAB analysis requires the music to be assessed in individual octave bands.



The LAB criteria are in two parts according to different times of day being the pre midnight criteria (7.00 am to midnight) and the post-midnight criteria (after midnight to 7.00 am). The LAB pre midnight criteria allows noise emissions from a licensed premises to exceed the background noise level by 5 dB in any octave band with centre frequencies between 31.5 Hz and 8 kHz at any residential boundary. The LAB post midnight criteria are more stringent and require that the noise emissions from any licensed premises are not to exceed the background noise level within the same octave bands used in the pre-midnight criteria at any residential boundary. The post midnight criteria also stipulate that noise emissions from licensed premises be inaudible in any habitable room of any residential premises.

The SEE indicates that the hours of operation during week day period cease at midnight and on the Friday and Saturday night continues till 2am. Therefore in terms of assessment criteria the emission of noise from activities occurring inside the hotel (on the licensed premises) is governed on weekdays by the background +5 dB(A) criterion at residential boundaries, and for Friday and Saturday nights the after midnight +0 dB criterion with inaudibility.

As the accommodation quarters in the hotel are ancillary to the hotel then the criterion issued by the LAB does not apply to those premises.

As we were unable to identify any residential premises during our site inspection or ascertain any measurable increase above the background level operations in Globe Street or Harrington Street our measurements therefore reveal full compliance with the after midnight LAB criteria.

The SEE indicates there will be additional mechanical plant associated with the alterations and additions which therefore being consistent with Council's criteria would on the basis of our Thursday morning measurements (with the Hotel closed) realise a permitted noise contribution not exceeding 50dB(A) at nearby commercial properties. This criterion excludes the contribution of the offending mechanical system/fan (not associated with the hotel) identified above.



Conclusion

The Fortune of War and Russell Hotels are located in a commercial area of The Rocks and are not in immediate proximity to residential dwellings.

As identified in the SEE, the alterations and additions to the Hotels do not involve the provision of a night club or entertainment areas and that the majority of alterations are related to internal alterations for the hotel premises and then alterations to the accommodation area above.

As correctly identified in the SEE the subject alterations are not envisaged to create any acoustic impact.

However, pursuant to request of the Sydney Harbour Foreshore Authority an acoustic assessment was required to be undertaken for the subject alterations and additions.

Unattended ambient measurements were carried out in late 2008 and identified the acoustic environment of the subject area.

Attended measurements were carried out with both the hotels operating and closed to ascertain the acoustic environment of the area and noise emitted from the hotels

The excessive noise from a mechanical exhaust fan located on the building adjacent to or over Surgeons Circuit was found to influence the area and has been excluded from the assessment criterion nominated for additional mechanical plant associated with the proposed alterations.

Noise associated with the provision of entertainment in the Fortune of War Hotel was found to fully comply with the LAB criteria if one considers Globe Street or Harrington Street potential residential developments, although during the course of our site visits we did not find this to be the case.



Noise from patrons in the rear of the hotel via an open window to Nurses Walk gave rise to measureable increases above the background level that relates to commercial premises, not residential premises. The proposed alterations and additions reduce the lounge areas at the rear of the hotel and therefore the number of patrons that could occupy those spaces.

The provision of gaming rooms at the rear of the premises is not envisaged to cause any noticeable increase in noise emission from the premises and the only addition that we would recommend in terms of the proposed plans for the benefit for such patrons is to provide acoustic absorption to the ceiling and the upper walls of those areas.

As a result of our investigations we not see that there are any acoustic issues associated with the proposed alterations and additions to the Fortune of War and the Russell Hotel at The Rocks and therefore are able to support the subject application.

Yours faithfully,

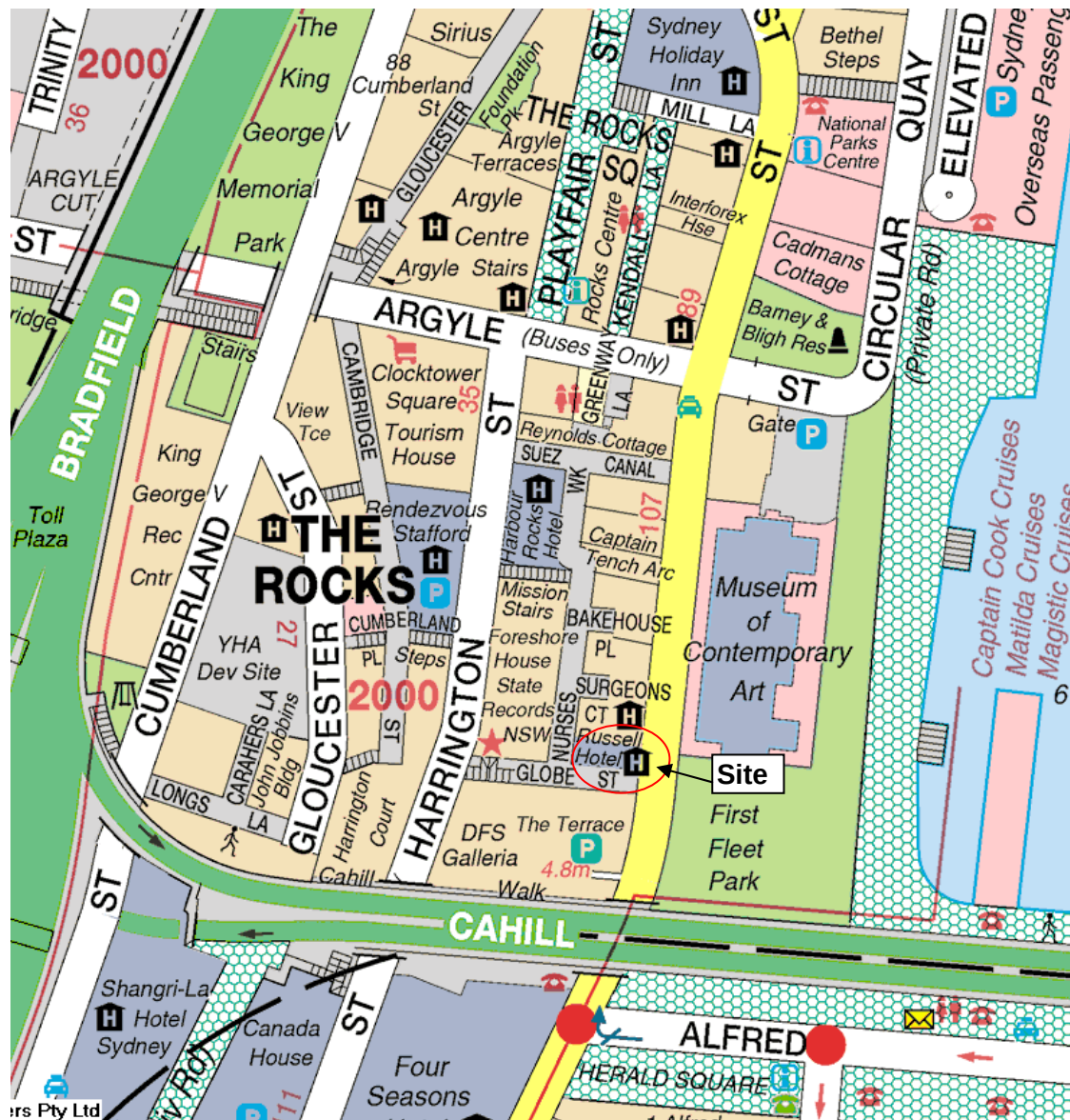
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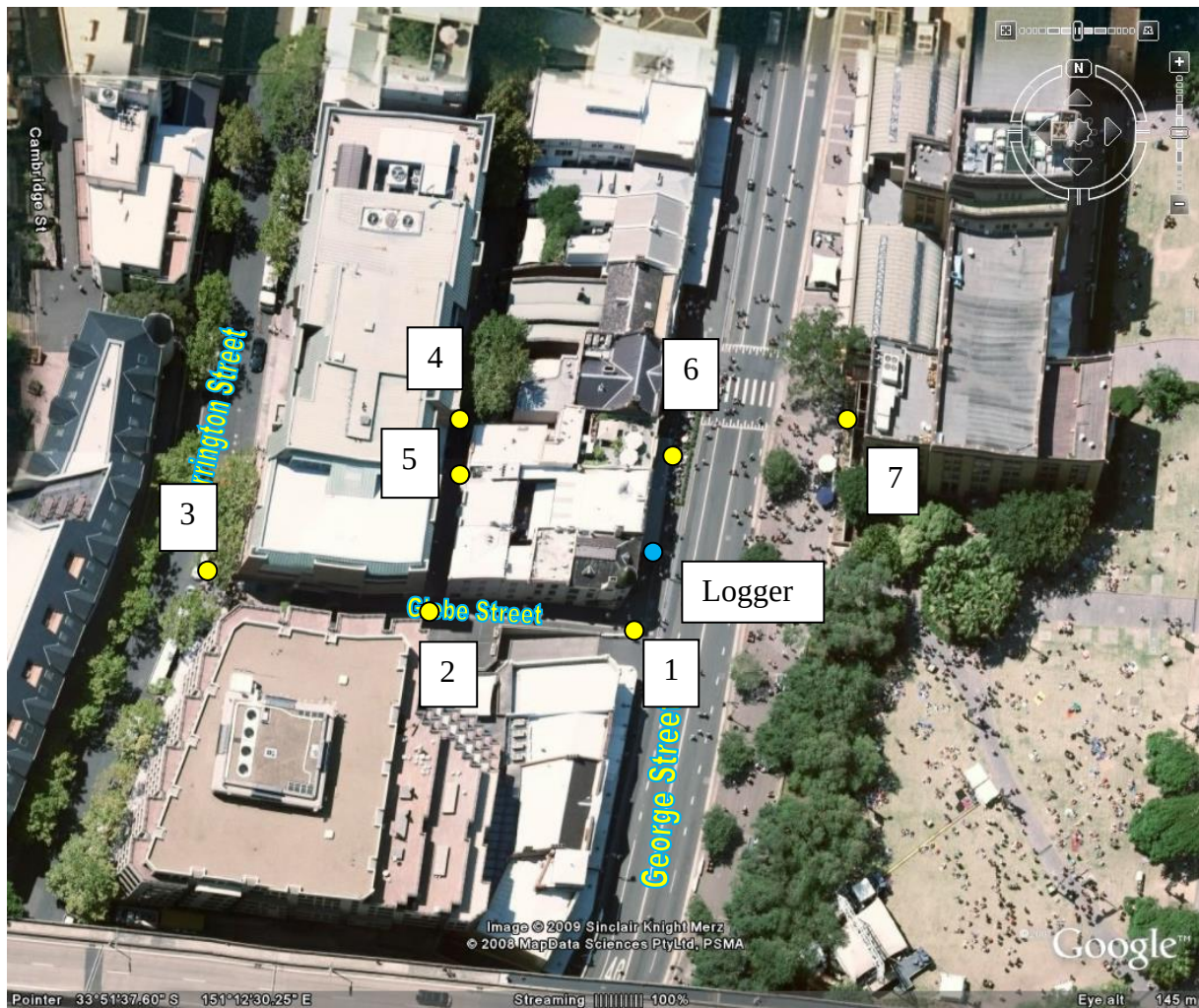


STEVEN COOPER



APPENDIX A: Site and Measurement Locations





APPENDIX B: Noise Logger Measurement Results

Fortune of War Hotel & Russell Hotel						
Job Number:	4792.R1					
Instrumentation:	ARL Logger					
Logger Location:	Front awning					
Free Field:	yes					
Monitoring Period:	Monday, 24 November 2008			Friday 5 December 2008		
BACKGROUND AND AMBIENT NOISE MONITORING RESULTS NSW EPA's INDUSTRIAL NOISE POLICY , 2000						
Day	L90 Background Noise Levels			Leq Ambient Noise Levels		
	Day 7am - 6pm	Evening 6pm - 10pm	Night 10pm - 7am	Day 7am - 6pm	Evening 6pm - 10pm	Night 10pm - 7am
Monday 24 November 2008	*	59.0	53.5	*	66.2	64.5
Tuesday 25 November 2008	63.0	60.0	53.0	68.1	66.9	64.0
Wednesday 26 November 2008	62.5	59.5	52.5	68.0	67.2	62.9
Thursday 27 November 2008	60.0	59.0	52.0	67.4	65.6	63.4
Friday 28 November 2008	59.5	62.5	53.0	69.1	66.4	64.7
Saturday 29 November 2008	55.5	60.5	52.5	65.8	67.2	67.9
Sunday 30 November 2008	54.0	56.5	51.0	64.8	63.7	61.8
Monday 1 December 2008	57.0	59.0	52.0	67.2	65.6	63.0
Tuesday 2 December 2008	59.5	58.5	51.5	67.7	66.2	61.8
Wednesday 3 December 2008	58.5	60	52.5	67.6	65.8	64.6
Thursday 4 December 2008	60.5	63	53.5	68.7	67.5	64.7
Friday 5 December 2008	*	*	*	*	*	*
RBL Median	59.5	59.5	52.5	-	-	-
Log Average	-	-	-	67.6	66.3	64.3

TRAFFIC NOISE MONITORING RESULTS NSW EPA's ENVIRONMENTAL CRITERIA FOR ROAD TRAFFIC NOISE, 1999						
Day	Leq Ambient Noise Levels		Leq 1 Hr Noise Levels			
	Day 7am - 10pm	Night 10pm - 7am	Day - Max	Day - Min	Night - Max	Night - Min
Monday 24 November 2008	*	67.0	70.6	*	69.7	66.1
Tuesday 25 November 2008	70.3	66.5	73.9	68.2	68.3	64.3
Wednesday 26 November 2008	70.3	65.4	74.5	67.2	67.3	62.2
Thursday 27 November 2008	69.5	65.9	73.2	66.8	70.3	61.0
Friday 28 November 2008	71.0	67.2	74.5	67.6	70.4	63.1
Saturday 29 November 2008	68.7	70.4	72.6	65.5	74.2	63.6
Sunday 30 November 2008	67.0	64.3	71.9	62.3	66.9	59.3
Monday 1 December 2008	69.3	65.5	72.7	67.0	68.1	61.4
Tuesday 2 December 2008	69.9	64.3	72.7	67.4	66.9	60.3
Wednesday 3 December 2008	69.7	67.1	73.4	67.5	70.4	64.2
Thursday 4 December 2008	70.9	67.2	75.4	68.6	68.7	65.2
Friday 5 December 2008	*	*	70.1	*	*	*
Log Average	69.8	66.8	73.2	67.1	69.8	63.2

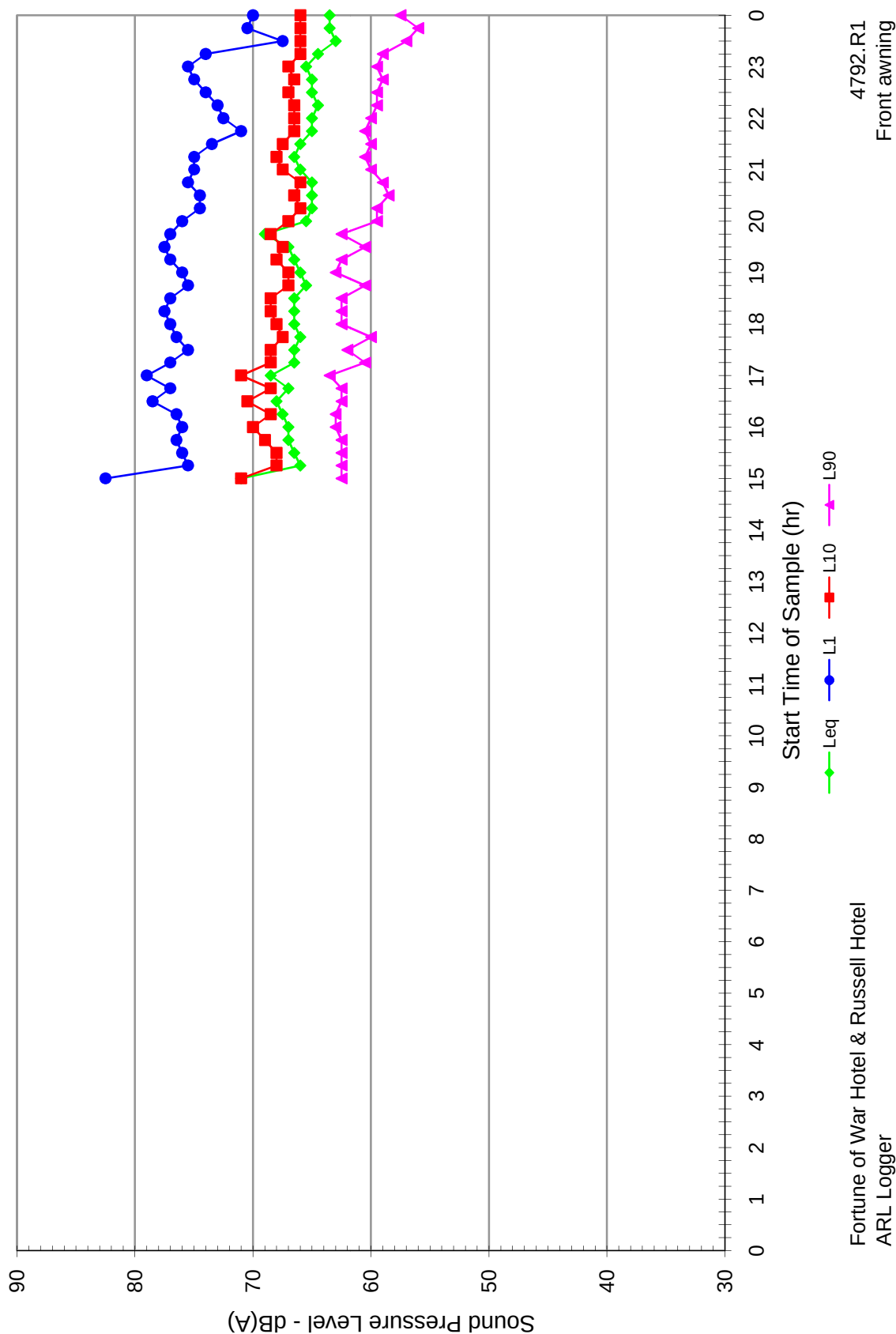
* indicates an incomplete set of data for a given time period

Nighttime for a given day continues through to the following morning



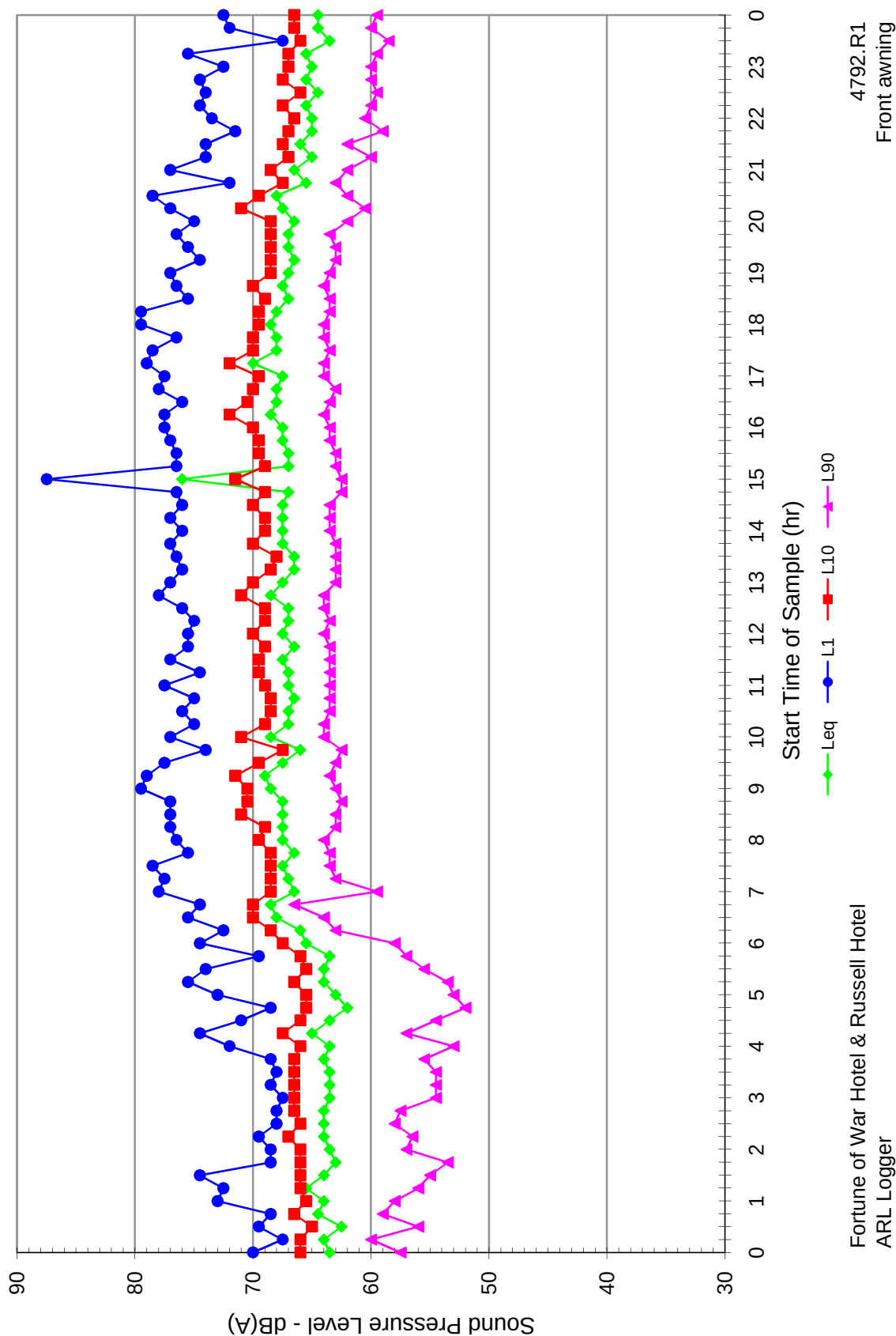
Ambient Measurements

Monday, 24 November 2008



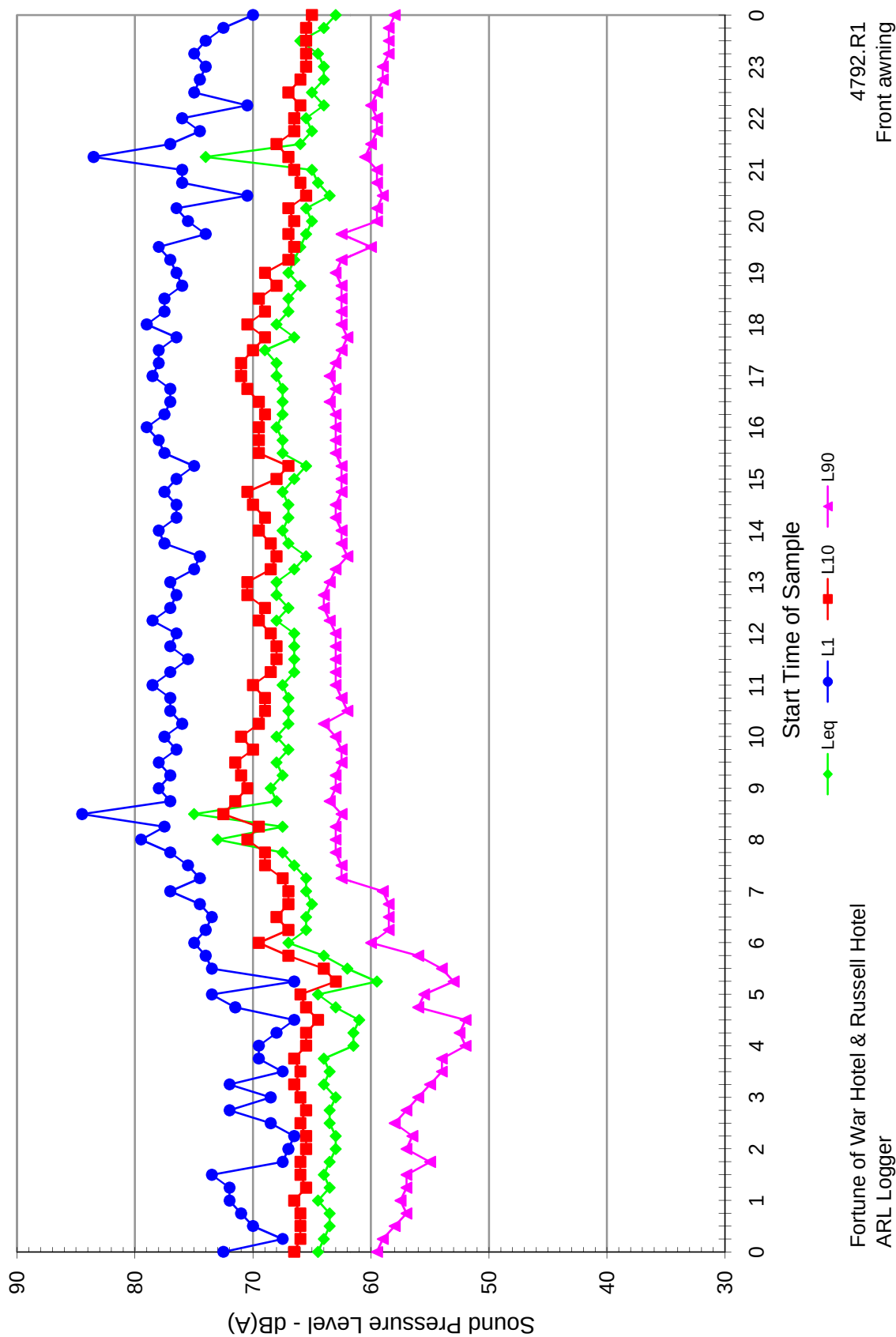
Ambient Measurements

Tuesday, 25 November 2008



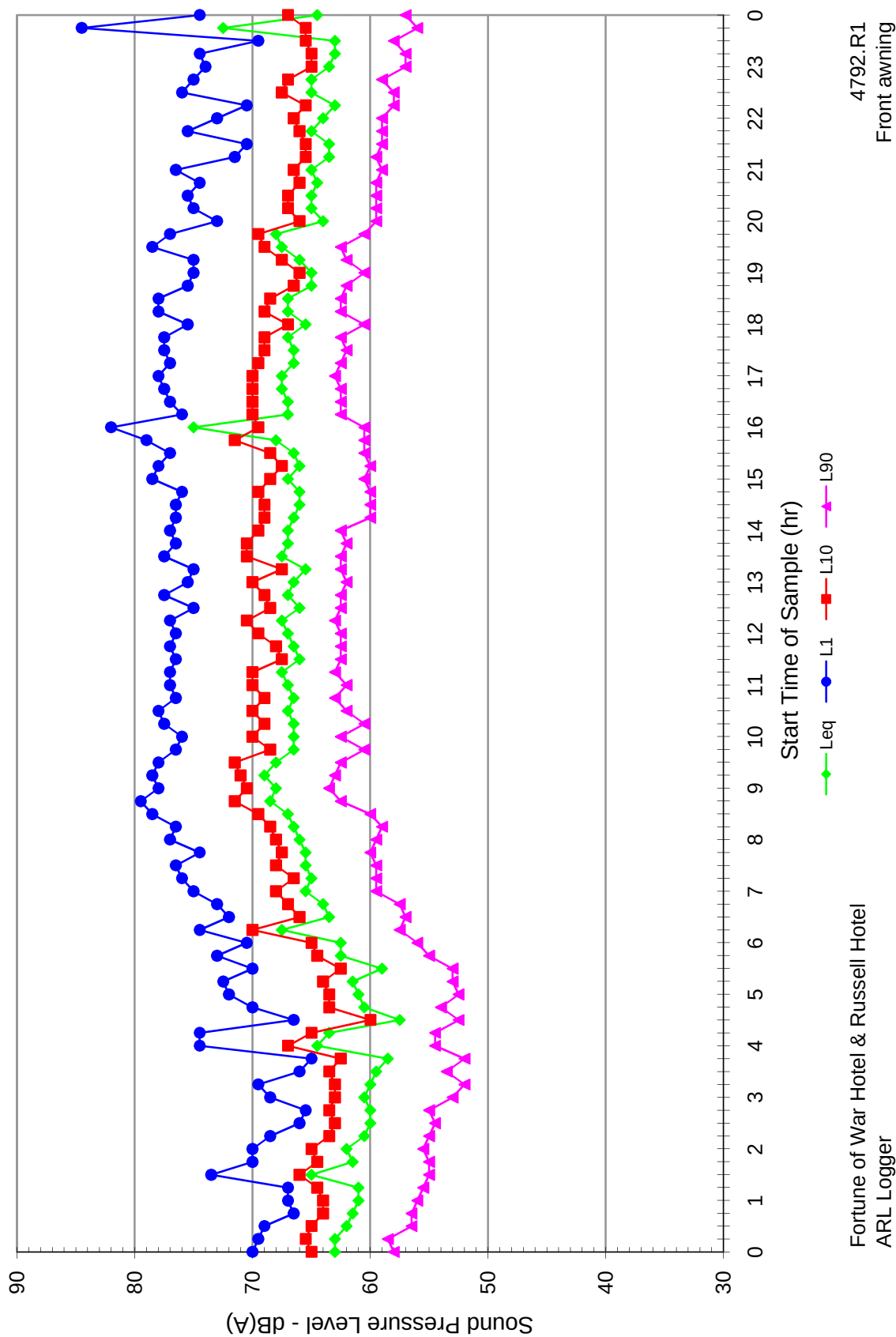
Ambient Measurements

Wednesday, 26 November 2008



Ambient Measurements

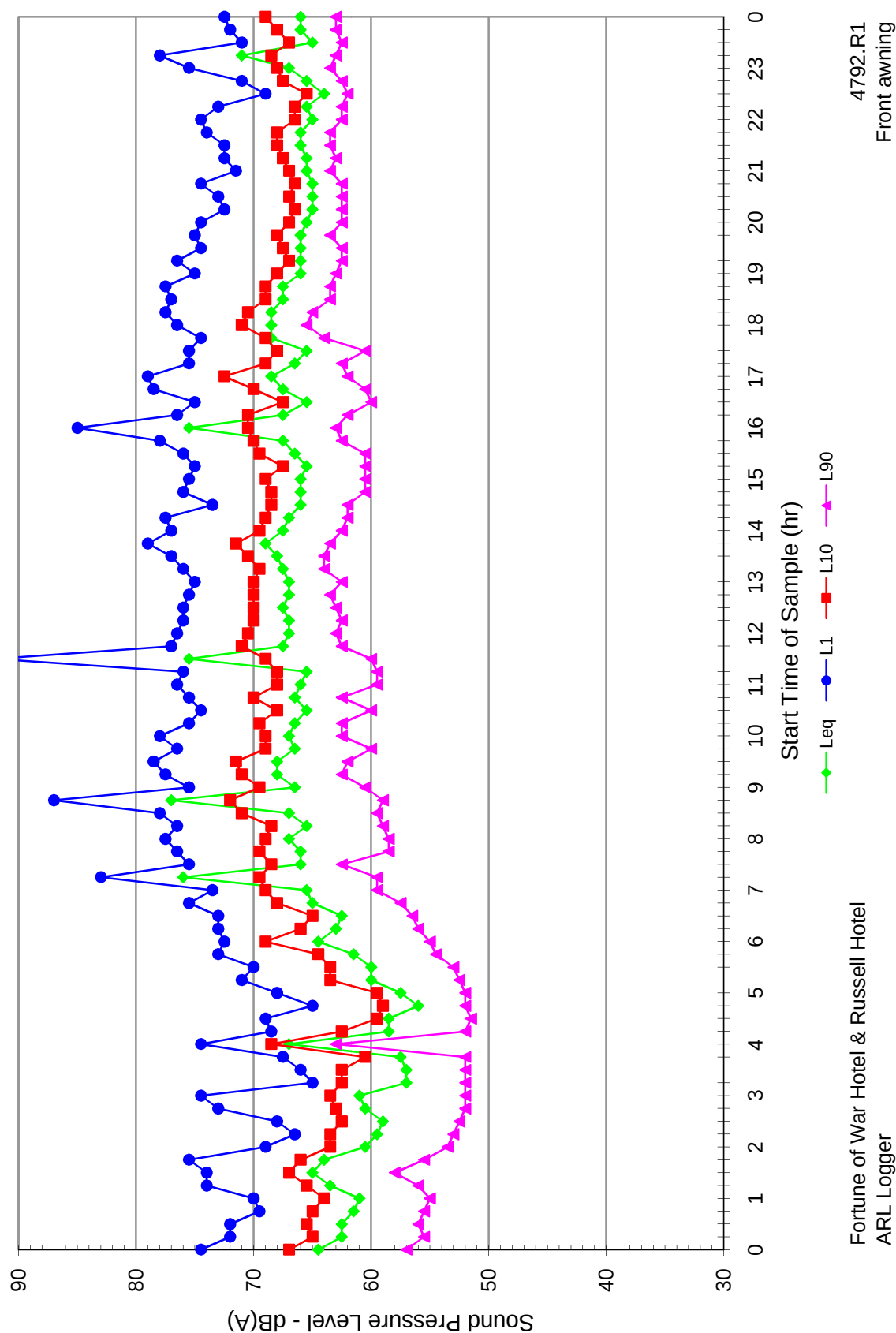
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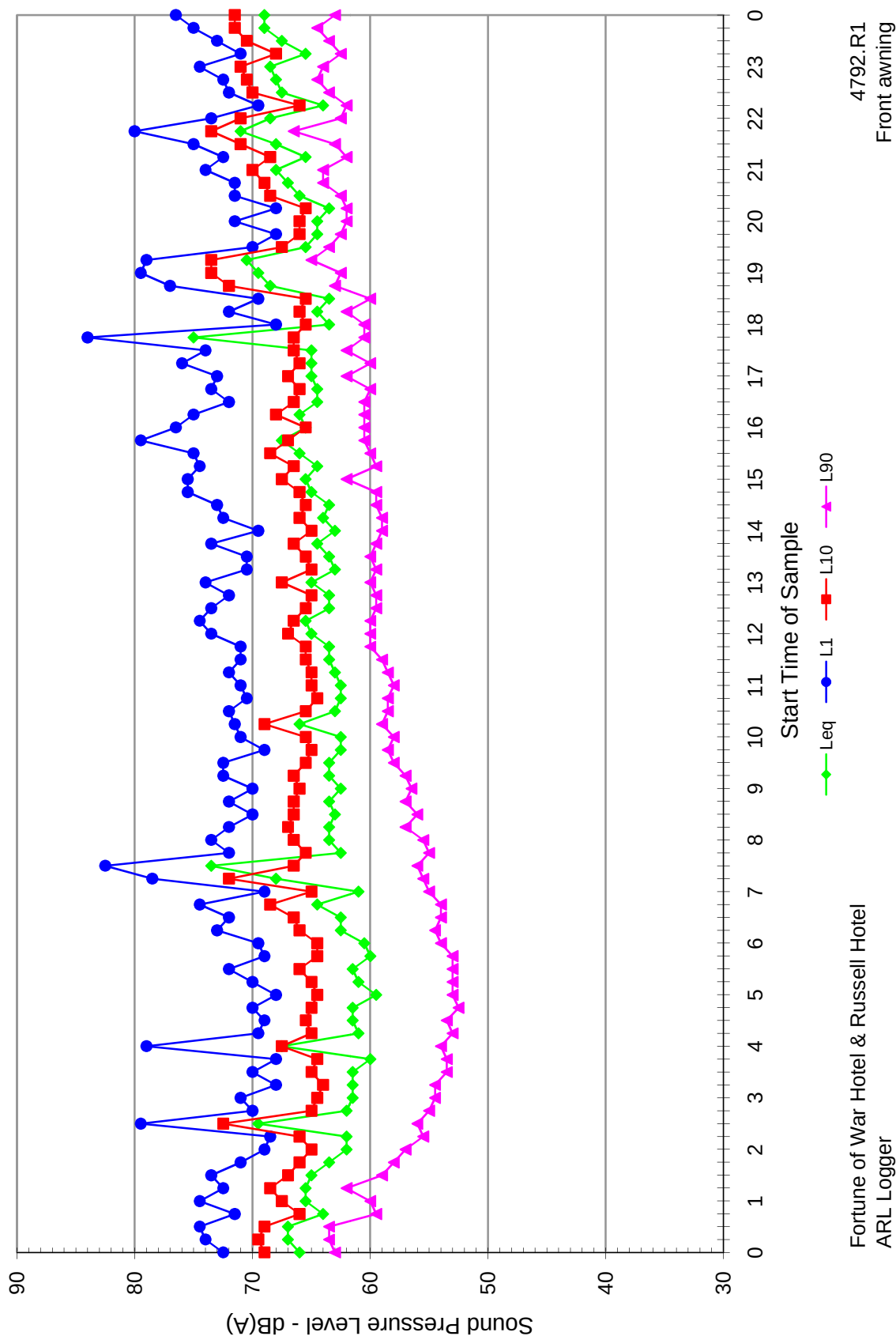
Ambient Measurements

Friday, 28 November 2008



Ambient Measurements

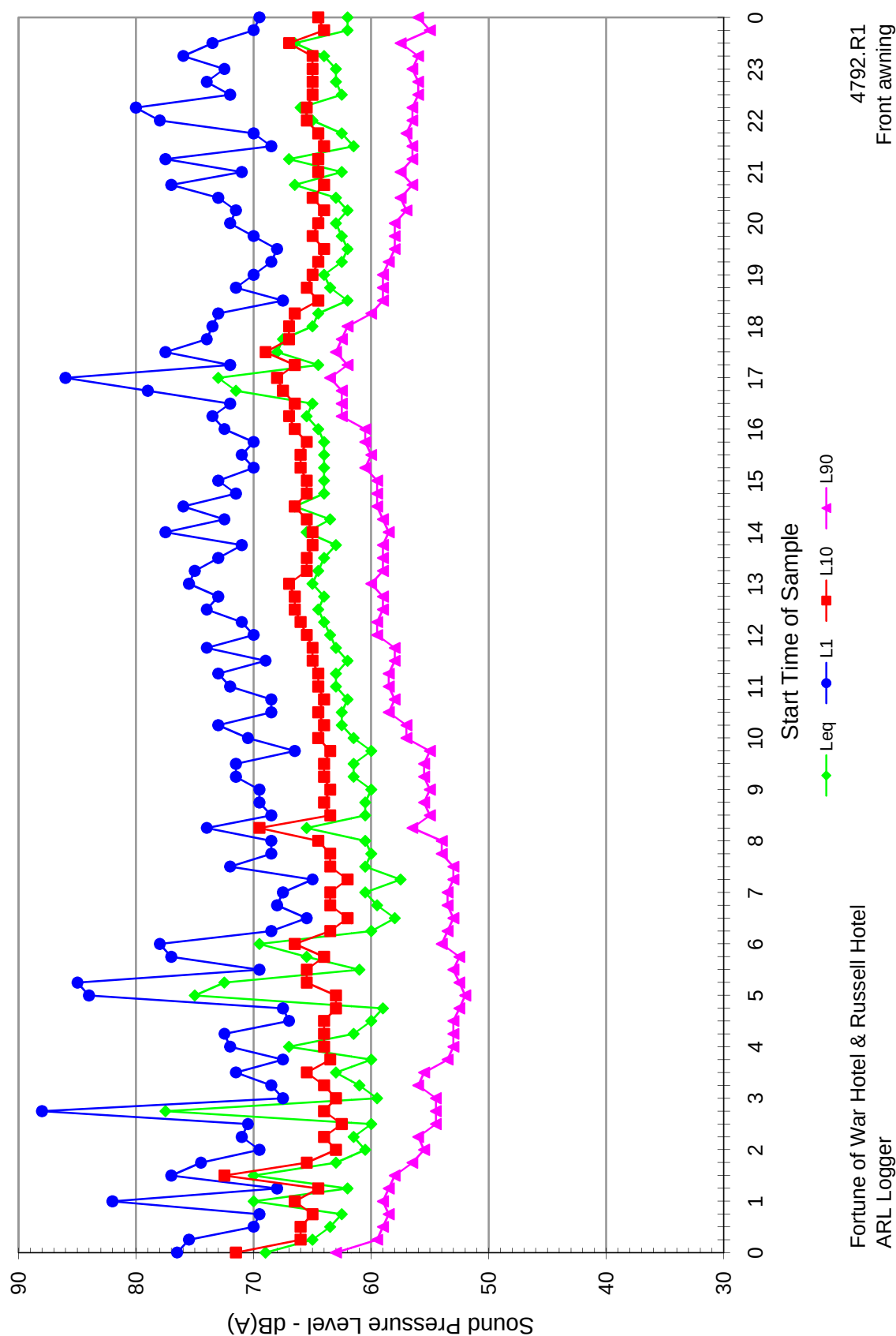
Saturday, 29 November 2008





Ambient Measurements

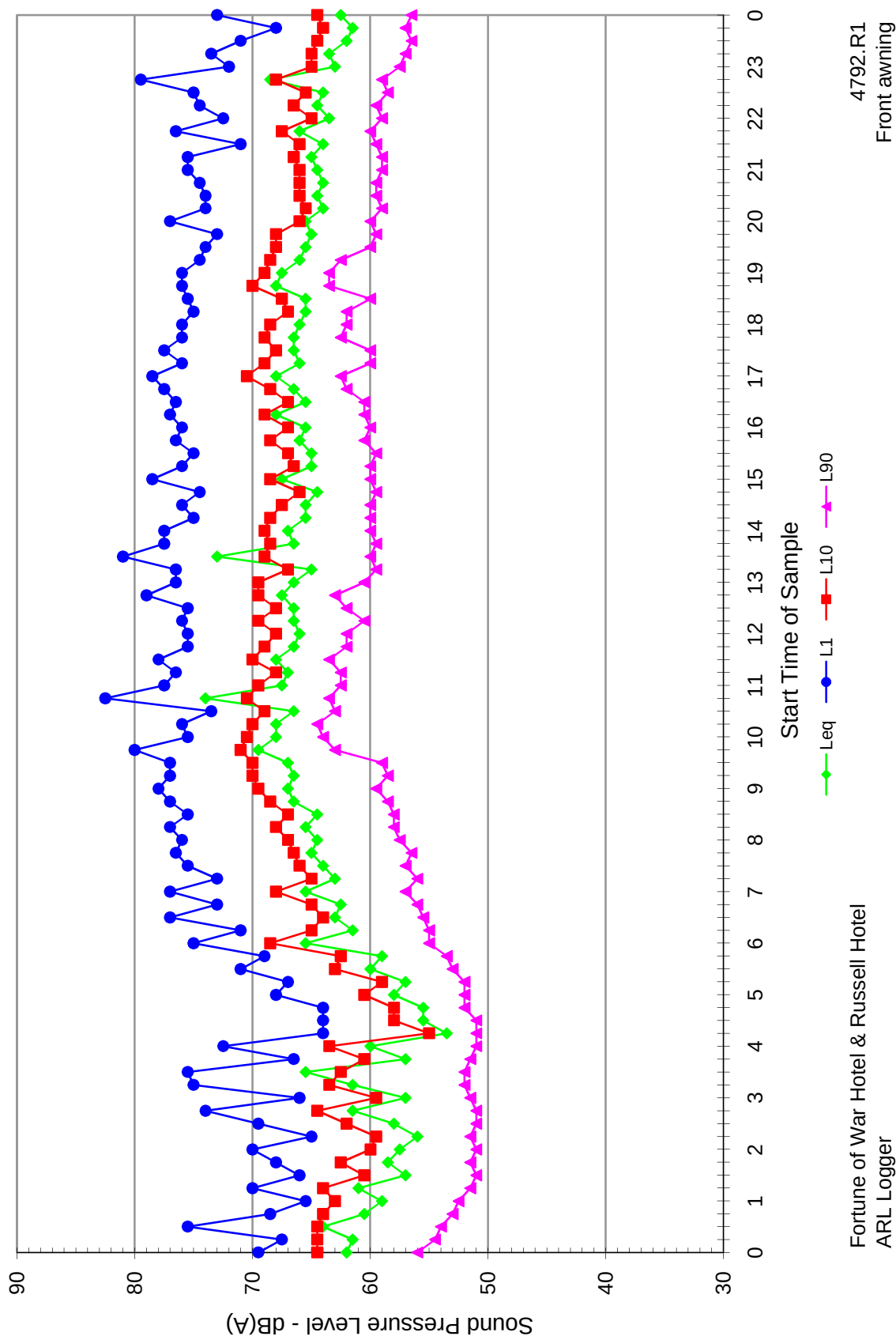
Sunday, 30 November 2008





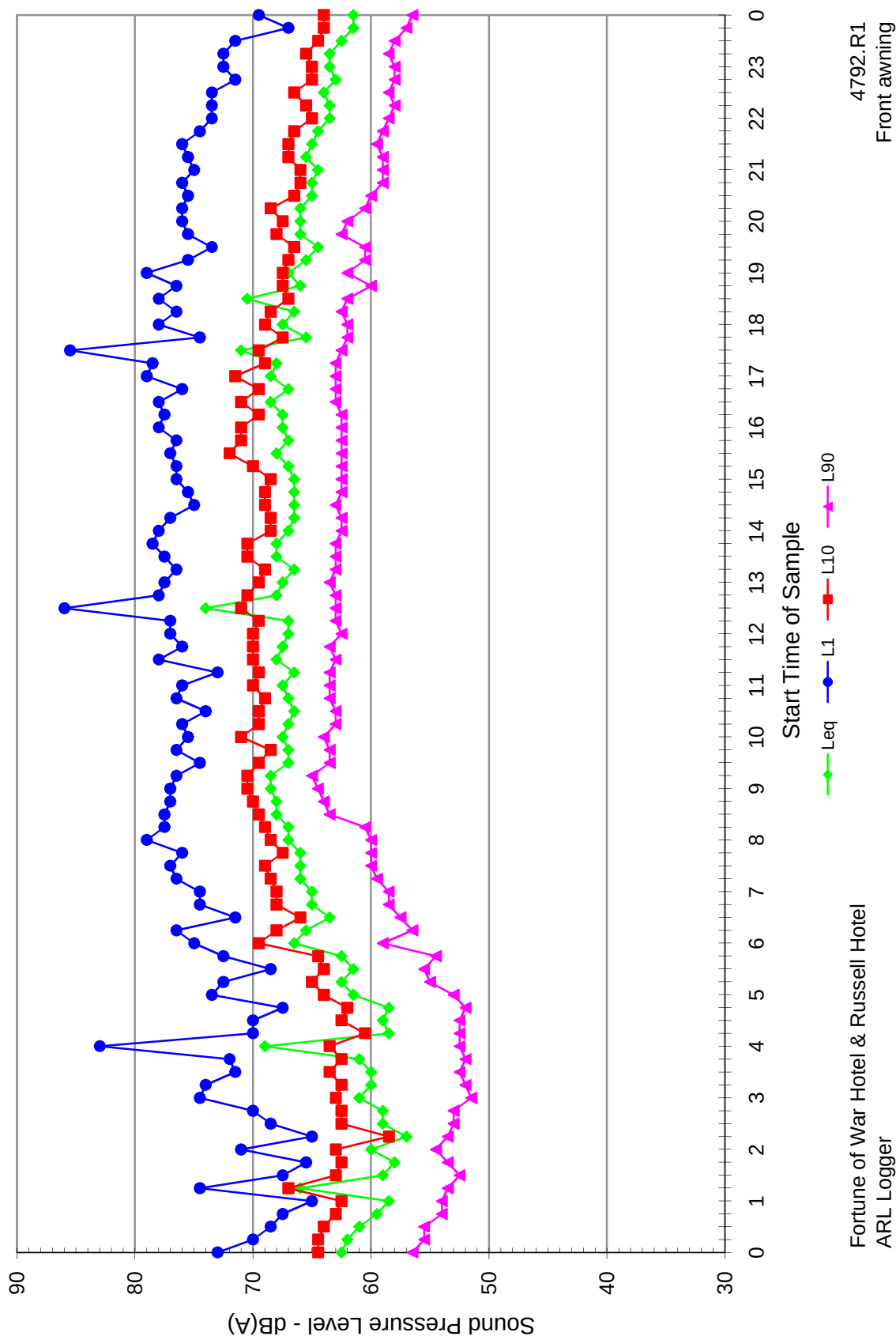
Ambient Measurements

Monday, 1 December 2008



Ambient Measurements

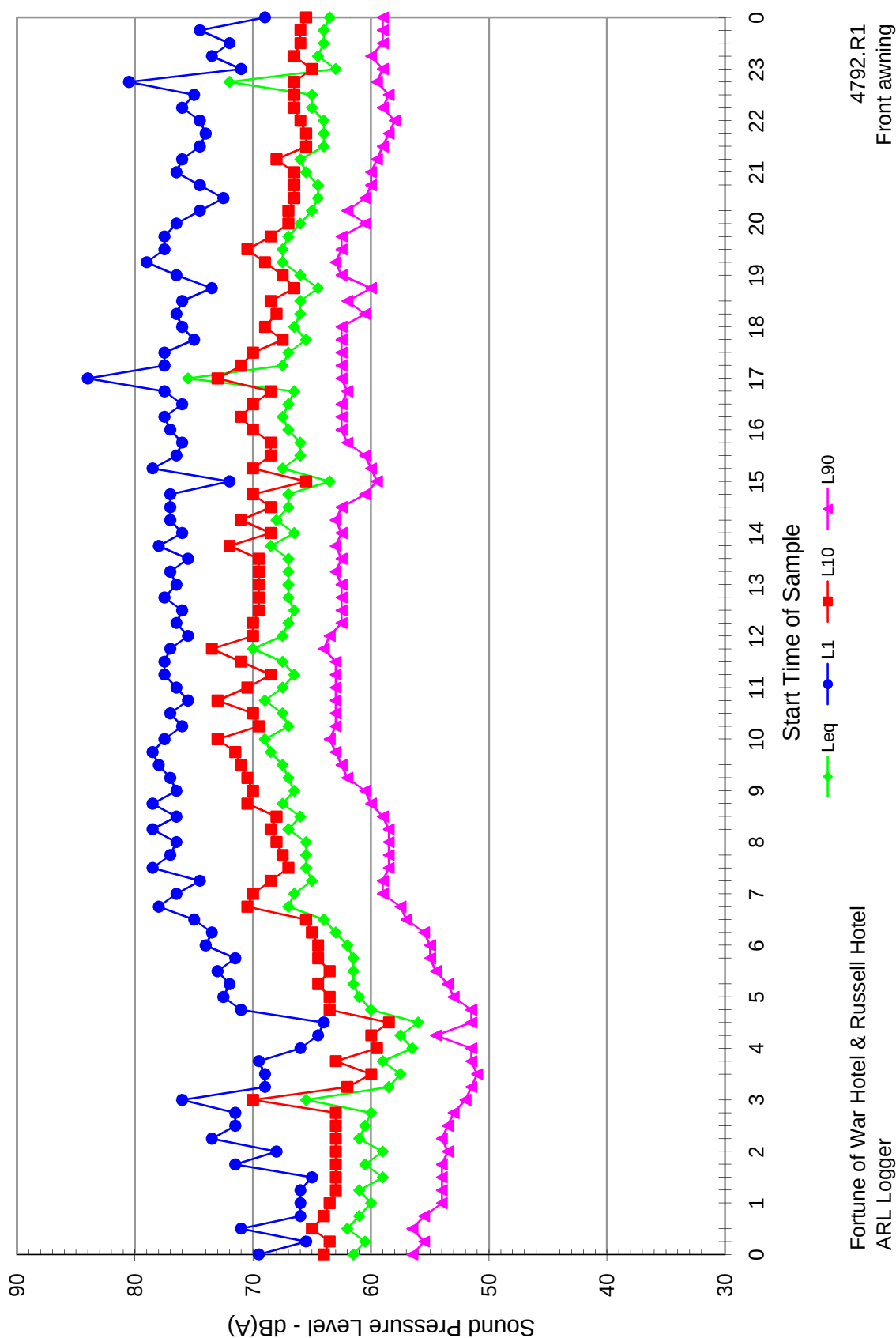
Tuesday, 2 December 2008





Ambient Measurements

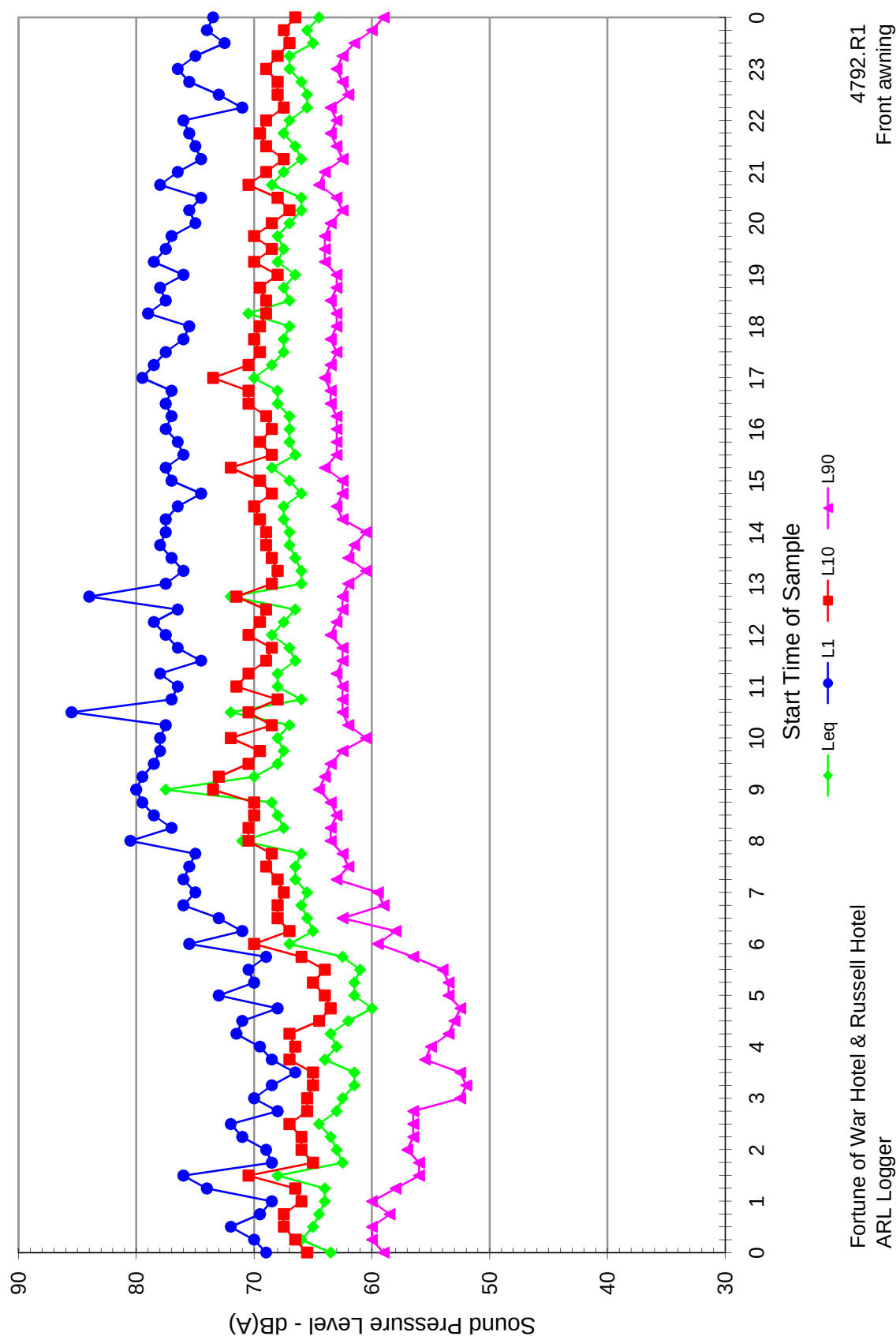
Wednesday, 3 December 2008





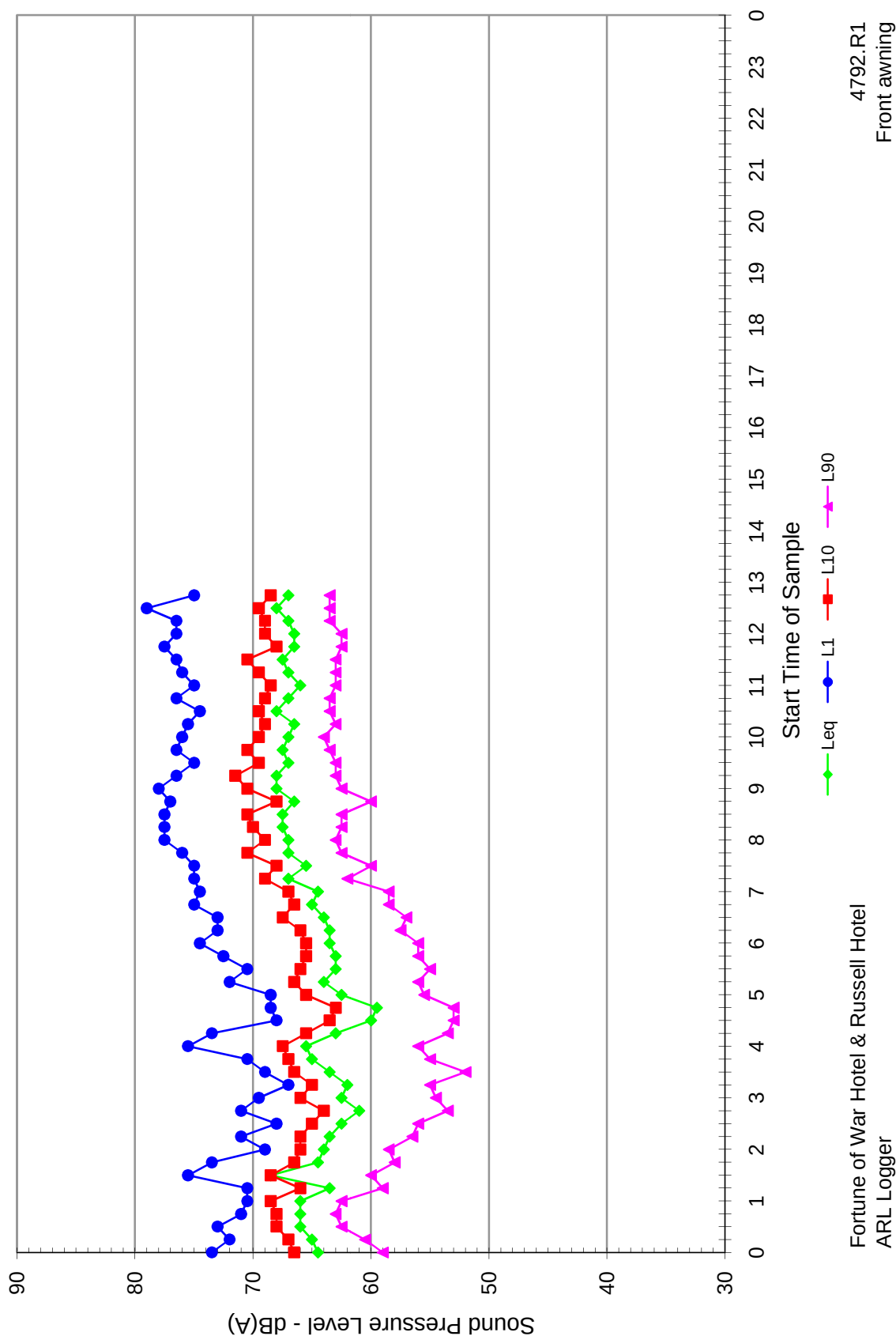
Ambient Measurements

Thursday, 4 December 2008



Ambient Measurements

Friday, 5 December 2008



APPENDIX C: Attended Measurement Results

Measurement Results between 2 am to 3 am Thursday 9th April 2009

Location	Descriptor	dB(A)	A-Weighted Octave Band Centre Frequency (Hz)								
			31.5	63	125	250	500	1k	2k	4k	8k
Location 1	L ₁₀	55	22	34	43	48	50	50	46	39	31
	L ₉₀	53	18	29	39	45	47	48	43	35	22
Location 3	L ₁₀	51	20	33	39	42	47	46	41	36	28
	L ₉₀	50	17	29	36	40	45	44	40	33	22
Location 4	L ₁₀	63	20	37	45	56	57	60	52	43	31
	L ₉₀	62	16	27	42	52	55	58	49	39	25

Measurement Results between 10.30pm to 11.30 pm Friday 17th April 2009

Location	Descriptor	dB(A)	A-Weighted Octave Band Centre Frequency (Hz)								
			31.5	63	125	250	500	1k	2k	4k	8k
Location 2	L ₉₀	60	32	37	43	47	51	54	53	49	41
Location 3	L ₉₀	58	29	35	43	46	51	52	52	47	39
Location 4		64	32	35	44	49	56	59	58	55	48
Location 5	Patrons L ₁₀	68	30	34	47	52	63	63	61	57	49
Location 6	DJ L ₁₀	81	41	66	71	73	76	76	72	66	59
	Artist L ₁₀	94	46	73	86	91	85	88	78	68	63
Location 7	DJ L ₁₀	-	-	49	56	-	-	-	-	-	-
	Artist L ₁₀	71	35	52	62	65	65	62	59	53	44
	L ₉₀	64	31	46	52	53	58	58	56	50	39

